

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. – 45. (Cancelled).

46. (New) A plasma processing apparatus for applying a plasma process to a substrate, the plasma processing apparatus comprising:

- a process chamber in which the substrate is subject to the plasma process;
- a plasma source that generates plasma in the process chamber;
- a gas introducing portion configured to introduce a gas into the process chamber;
- a first vacuum device that evacuates the gas from said process chamber;
- a second vacuum device that evacuates gases from said gas introducing portion; and
- a gas exhaust line connecting said gas introducing portion to said second vacuum device,

wherein said gas introducing portion includes:

- an inlet port through which the gas is introduced into said gas introducing portion;
- an outlet port through which the gas is evacuated from said introducing portion by said second vacuum device;
- a gas passage provided in said gas introducing portion and connected to said inlet port and said outlet port; and
- a plurality of gas nozzles connected to said gas passage,

wherein said gas exhaust line is directly connected to said outlet port of said gas introducing portion.

47. (New) The plasma processing apparatus as claimed in claim 46, wherein said gas introducing portion is formed in an annular ring shape.

48. (New) The plasma processing apparatus as claimed in claim 46, wherein said gas introducing portion is of a showerhead type having a surface facing said substrate and provided with a plurality of holes.

49. (New) The plasma processing apparatus as claimed in claim 46, wherein said gas passage is formed as an annular passage.

50. (New) The plasma processing apparatus as claimed in claim 46, wherein said plasma source includes a flat antenna having a plurality of slits.

51. (New) The plasma processing apparatus as claimed in claim 46, wherein said gas introducing portion includes a first gas introducing portion configured to supply a first gas and a second gas introducing portion configured to supply a second gas, and said second vacuum device is directly connected to said first gas introducing portion and a third vacuum device is connected to said second gas introducing portion.

52. (New) The plasma processing apparatus as claimed in claim 46, wherein a diameter of said outlet port is larger than a diameter of said gas nozzles.

53. (New) A plasma processing apparatus for applying a plasma process to a substrate, the plasma processing apparatus comprising:

a process chamber in which the substrate is subject to the plasma process;

a plasma source that generates plasma in the process chamber;

a gas introducing portion configured to introduce a gas into the process chamber;

a vacuum device that evacuates the gas from said process chamber; and

a bypass line having one end connected to said gas introducing portion and the other end connected to said vacuum device for evacuating the gas from said gas introducing portion,

wherein said gas introducing portion includes:

an inlet port through which the gas is introduced into said gas introducing portion;

an outlet port through which the gas is evacuated from said introducing portion by said vacuum device;

a gas passage provided in said gas introducing portion and connected to said inlet port and said outlet port; and

a plurality of gas nozzles connected to said gas passage,

wherein said bypass line is directly connected to said outlet port of said gas introducing portion.

54. (New) The plasma processing apparatus as claimed in claim 53, wherein said gas introducing portion is formed in an annular ring shape.

55. (New) The plasma processing apparatus as claimed in claim 53, wherein said gas introducing portion is of a showerhead type having a surface facing said substrate and provided with a plurality of holes.

56. (New) The plasma processing apparatus as claimed in claim 53, wherein said gas passage is formed as an annular passage.

57. (New) The plasma processing apparatus as claimed in claim 53, wherein said plasma source includes a flat antenna having a plurality of slits.

58. (New) The plasma processing apparatus as claimed in claim 53, wherein said gas introducing portion includes a first gas introducing portion configured to supply a first gas and a second gas introducing portion configured to supply a second gas, and said bypass line included a first bypass line and a second bypass line, and wherein said first bypass line is directly connected to said first gas introducing portion and said second bypass line is directly connected to said second gas introducing portion.

59. (New) The plasma processing apparatus as claimed in claim 53, wherein a diameter of said outlet port is larger than a diameter of said gas nozzles.